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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Yukio MICHISHITA

Serial No.: **09/933,705**

Group Art Unit: 2613

Filed: August 22, 2001

Examiner: Bello, A.

For: **OPTICAL TRANSMISSION PATH MONITORING SYSTEM, MONITORING APPARATUS THEREFOR AND MONITORING METHOD THEREFOR**

Commissioner of Patents
Alexanderia, VA 22313-1450

APPELLANT'S REPLY BRIEF ON APPEAL

Sir:

Appellant has respectfully appealed the rejection of claims 1, 3-11, 23, and 25-39 in the Office Action dated January 12, 2006, and timely submitted an Appeal Brief on June 12, 2006, as revised and re-submitted by facsimile on October 13, 2006, to accommodate the Notification of Non-Compliant Appeal Brief mailed on September 27, 2006.

The Examiner's Answer was mailed on August 25, 2006. This Reply Brief responds to the Examiner's Answer.

A. STATUS OF CLAIMS

Claims 1, 3-11, 23, and 25-39 are all of the claims presently pending in the application. As best understood from the comments on page 2 of the Examiner's Answer, the rejection under 35 USC §103(a), *may have been* withdrawn.

However, since the Examiner's Answer contradicts itself by thereinafter actually presenting this rejection for claims 4, 5, 7-11, 26-31, 33-35, and 37-39, beginning on page 5 of the Examiner's Answer, Appellant has to presume that this rejection remains in place until the Examiner's Answer is corrected on the record.

Claims 1, 3, 6, 23, 25, 32, and 36 stand rejected under 35 USC §102(e) as anticipated by commonly-assigned US Patent 6,301,404 to Yoneyama. Claims 4, 5, 7-11, 26-31, 33-35, and 37-39 *may or may not* continue to stand rejected under 35 USC §103(a) as unpatentable over Yoneyama.

Therefore, pending clarification of the Examiner's Answer, the rejections are being appealed for all pending claims.

B. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellant presents the following issues for review by the Board of Patent Appeals and Interferences:

ISSUE 1: THE ANTICIPATION REJECTION

Whether the rejection under 35 U.S.C. § 102(e) can be maintained for claims 1, 3, 6, 23, 25, 32, and 36, when the rejection clearly fails to address the plain meaning of the claim language as would be agreeable to one having ordinary skill in the art.

ISSUE 2: THE OBVIOUSNESS REJECTION

Whether the rejection under 35 U.S.C. § 103(a) can be maintained for claims 4, 5, 7-11, 26-31, 33-35, and 37-39, when the reference cited is commonly-assigned and qualifies as a prior art reference only under 35 U.S.C. § 102(e). *Note: this rejection may have been withdrawn by the Examiner.*

C. ARGUMENTS

ISSUE #1: The Anticipation Rejection based on Yoneyama

The Examiner continues to maintain that Yoneyama reads on the claimed invention, since, according to the Examiner and as best understood, there are two probe monitor lights in Yoneyama using two distinct frequencies. As best understood, the Examiner considers that, because the two probe lights use different frequencies, there will inherently be a dispersion effect in Yoneyama as relied upon in the method of the present invention. Therefore, the Examiner considers that the claim language, as broadly interpreted, is satisfied by Yoneyama.

Appellant respectfully disagrees.

Yoneyama does not teach the kind of optical fiber used in the present invention. Furthermore, Yoneyama also does not teach the band of signal wavelengths $\lambda 1$- $\lambda 4$ used in the present invention. Therefore, it cannot be said that Yoneyama uses a zero dispersion wavelength of the optical fiber used in the system in the band of the signal wavelengths $\lambda 1$-$\lambda 4$. The Examiner's only reasoning in the Examiner's Answer is that of identifying that a wavelength $\lambda sv1$ which is lower than a center wavelength is a negative dispersion wavelength and a wavelength $\lambda sv2$ which is higher than a center wavelength is a positive dispersion wavelength.

However, it should be noted that, in the present invention, the center wavelength is set to the zero dispersion wavelength in the system and the transmission path. This is not true in general for another system or transmission path. In fact, Yoneyama fails to even mention such description or suggestion.

In the present invention, by allocating a wavelength of the optical fiber monitoring probe light to such a wavelength that makes the wavelength dispersion in the optical transmission paths negative, it is possible to monitor without the effect of nonlinear deterioration (see page 22, line 24, to page 23, line 3). Furthermore, by allocating a wavelength of the optical amplifier-repeater monitoring probe light to such a wavelength that makes the wavelength dispersion in the optical transmission paths positive, it is

possible to monitor output fluctuations in the optical amplifier-repeater with high sensitivity (see page 23, lines 4-7).

In contrast, Yoneyama does not teach that a wavelength of the optical fiber monitoring probe light is allocated to such a wavelength that makes the wavelength dispersion in the optical transmission path negative, and a wavelength of the optical amplifier-repeater monitoring probe light is allocated to such a wavelength that makes the wavelength dispersion in the optical transmission path positive. Yoneyama teaches only that the wavelength $\lambda sv1$ of the supervisory light is lower than the band of signal wavelengths $\lambda 1$- $\lambda 4$ and the wavelength $\lambda sv2$ of the supervisory light is higher than the band of signal wavelengths $\lambda 1$- $\lambda 4$.

The present invention is not limited to the kind of fiber used to form the transmission path. The wavelength of the optical fiber monitoring probe light is set to a wavelength having a negative wavelength dispersion and the wavelength of the optical amplifier-repeater monitoring probe light is set to a wavelength having a positive wavelength dispersion, and thereby the effect mentioned above can be provided. For this reason, the Examiner's indication that composition of the fibers themselves should be positively recited as a limitation in the claims is incorrect.

In addition, Yoneyama does not teach that two supervisory signal lights concurrently monitor both the optical fiber and the optical amplifier-repeaters of the system. Rather, Yoneyama teaches that, by using two supervisory signal lights with different wavelengths $\lambda sv1$, $\lambda sv2$, both of the up and down optical fiber transmission lines can be monitored simultaneously (see column 11, lines 36-40). By using two supervisory signal lights with different wavelengths $\lambda sv1$, $\lambda sv2$, both of the optical input level and optical output level of the up optical amplifying repeaters can be monitored simultaneously (see column 12, lines 58-63).

Furthermore, by using two supervisory signal lights with different wavelengths $\lambda sv1$, $\lambda sv2$, if both of the optical fiber and optical amplifier-repeater are monitored concurrently, the effect mentioned above cannot be provided. In the present invention, the probe light having a negative wavelength dispersion monitors the optical fibers and the

probe light having a positive wavelength dispersion monitors the optical amplifier-repeater, thereby providing the effect of the present invention.

Stated slightly differently, as Appellant explained in the Appeal Brief, the feature of dispersion is also based upon the composition of the fibers making up the system and the present invention teaches that this dispersion effect can be utilized to discern which component is faulty, once the dispersion effect is properly understood and the probe light frequencies are properly selected based upon this understanding of the dispersion effect.

That is, even if Yoneyama is considered to inherently have dispersion in the optical fibers, as the Examiner seemingly argues, there is no suggestion in this reference to use the dispersion as described in the independent claims. Without properly designing the fiber optic composition for positive/negative dispersion, in combination with selecting proper frequencies for the monitoring lights as based on the resultant dispersion and for targeting specific components in the network, the system in Yoneyama would not provide a first monitoring light specific for checking the optical fibers and a second monitoring light specific for checking the amplifier-repeaters, as required by the plain meaning of the language in the independent claims.

This deficiency is clearly demonstrated in Yoneyama by recognizing that the monitor lights therein are each used to monitor both the optical fibers and the optical amplifier-repeaters.

Therefore, in Yoneyama, there is no suggestion of two distinct types of monitor probe lights: (1) an optical fiber monitoring probe light; *and* (2) an optical amplifier-repeater monitoring probe light, as the independent claims require.

Rather, in Yoneyama, the same probe light is used to monitor both the optical fiber and the optical amplifier-repeater.

Stated slightly differently in terms of the claim language of the present invention, in Yoneyama, the probe lights are clearly optical fiber/optical amplifier-repeater probe lights, since each light serves as a probe for both the optical fibers and the optical amplifier-repeaters. Simply having two optical fiber/optical amplifier-repeater probe lights does not convert one probe light into an optical fiber monitoring probe light and the other

into an optical amplifier-repeater monitoring probe light, as would be required to satisfy the plain meaning of the claim language.

The basic flaw in the Examiner's position is that of attempting to characterize Yoneyama as having one of its optical fiber/optical amplifier-repeater probe light as actually serving as an optical fiber/~~optical amplifier-repeater~~ probe light and the other optical fiber/optical amplifier-repeater probe light as actually serving as an ~~optical fiber/~~optical amplifier-repeater probe light.

However, this characterization is not the way that Yoneyama works, nor is this the description in Yoneyama itself. Each probe light in Yoneyama clearly monitors both the optical fibers and the optical amplifier-repeaters, and Yoneyama does not teach or suggest two distinct types of monitor lights as clearly required by the independent claims.

That is, the claim language clearly describes that there are two distinct types of probe lights, an optical fiber probe light *and* an optical amplifier-repeater probe light. The plain meaning of the claim language cannot simply be ignored.

Hence, turning to the clear language of the claims, in Yoneyama there is no: "... an optical fiber monitoring probe light 11 (Figure 1, and line 20 on page 8; items 11, 31 on Figure 5 and lines 9-17 on page 13) for monitoring optical fibers which constitute some parts of said optical transmission paths; *and* an optical amplifier-repeater monitoring probe light 12 (Figure 1, and lines 20-21 on page 8; items 12, 32 on Figure 5 and lines 18-25 of page 13) for monitoring optical amplifier-repeaters which constitute other parts of said optical transmission paths ....", as required by independent claim 1. The remaining independent claims have similar language.

Moreover, as previously discussed in the Appeal Brief, there is no suggestion in Yoneyama for probe lights having frequencies specifically selected for monitoring the respective component for the probe light, let alone based upon wavelength dispersion. Indeed, the dual monitoring purpose in Yoneyama, wherein a single probe light monitors both the optical fiber and the optical amplifier-repeater actually teaches against the final claim limitation, wherein the wavelength characteristic for each probe light is clearly described.

That is, in Yoneyama, there is no teaching or suggestion of: "... wherein a wavelength of said optical fiber monitoring probe light comprises such a wavelength as makes wavelength dispersion in said optical transmission paths negative (Figure 4, left side), and a wavelength of said optical amplifier-repeater monitoring probe light comprises such a wavelength as makes wavelength dispersion in said optical transmission paths positive (Figure 4, right side)."

Clearly, the probe lights in Yoneyama, in attempting to characterize their relevance with the dispersion effect described by the language of this final claim limitation and their dual purpose of monitoring both the optical fibers and the amplifier-repeaters, would have to be characterized as using both negative and positive dispersion in order to satisfy the plain meaning of this final claim limitation, since each light serves to monitor both the optical fiber and the optical amplifier-repeater.

Therefore, even under the Examiner's strained interpretation of Yoneyama, the analysis for the final claim limitation would inherently cause a contradiction relative to the description in the plain meaning of the claim language.

ISSUE #2: The Obviousness Rejection based on Yoneyama

This rejection *may or may not* still be an issue for review, but Appellant has no further comments to present to the Board.

D. CONCLUSION

In view of the foregoing, Appellants submit that claims 1, 3-11, 23, and 25-39, all the claims presently pending in the application, are clearly patentably distinct from the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to remove all rejections of claims 1, 3-11, 23, and 25-39.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Attorney's Deposit Account number 50-0481.

Respectfully submitted,

Dated: 10/23/06

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